

## NOTE XIV.

## ON CEPHALOPHUS SILVICULTOR (AFZELIUS)

BY

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(Plates 1 and 2).

In May of this year died in the Rotterdam Zoological Garden the beautiful male-specimen of *Cephalophus silvicultor*: immediately it has been brought over to Leyden, so that we could study it in the flesh, take all measurements and make casts of different important parts. The skeleton and the highly artistic stuffed skin is now in our collection. Besides it there are in our Museum the skin of a nearly adult male with its skeleton, the skull of another adult male-specimen, the skull of a nearly adult female and finally the mounted skin of a young female with its skeleton. The latter died in 1894 in the Rotterdam Zoological Garden and is like the first mentioned adult male from the Congo: the other specimens have been procured by Mr. Jackson Demery from Liberia, Grand Cape Mount, in 1892, 1893 and 1896. The adult male from the Congo lived 9 years in the Rotterdam Garden: it therefore may be called a very adult specimen.

In comparing the original description and figures of animal and horns given by Afzelius in 1815 with those in the most recently published monograph by Sclater and Oldfield Thomas in May 1895, everyone must confess that

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here certainly something is incorrect and that either Afzelius or the authors of the »Book of Antelopes» are wrong. Although in that Book is stated that the illustration of this species on Plate XIII is copied from a watercolour drawing taken in April 1894 by Keulemans from the very same Rotterdam-male now stuffed before me, I can assure that the mentioned illustration is *perfectly incorrect!*

The very typical colored spot on the hinder part of the back is badly represented in Selater's book; the Rotterdam-specimen *never* showed that colored spot so extended to the tail; in so far Afzelius' figure is much more correct, as will grow evident from my descriptions of the skins in our Museum.

Dr. J. Büttikofer, the Director of the Zoological Garden at Rotterdam wrote me as follows:

»The specimen made his entrance in the Rotterdam  
 »Zoological Garden on May 26<sup>th</sup> 1891, directly imported  
 »from Banana, Congo: at that time it was not yet fully  
 »adult. All the officers and servants at present in func-  
 »tion and having been there on the date of the arrival  
 »of the animal, declare that as to the color it *in no way*  
 »*has changed*, and that the yellow color never has occu-  
 »pied more space towards the haunches than at the moment  
 »of its dying: as to the short hairs on the haunches they  
 »were as short as now and colored as now, so that at  
 »first the men supposed that the hairs had been rubbed  
 »off: direct observation however soon learned that this  
 »could not be so as the animal never was observed rub-  
 »bing that parts of the body; these short hairs are there-  
 »fore characteristic to that species: Mr. Keulemans must  
 »have lived in the supposition that these hairs had been  
 »rubbed off, so he corrected nature and made an idealized  
 »drawing or as the German say a »verschlimmbessert»  
 »one». So far Dr. Büttikofer.

I cannot understand how the authors of the Book of Antelopes could reproduce Mr. Keuleman's drawing without any comment, for as a matter of fact the specimens in

the British Museum are quite differently colored; they certainly show the same distribution of colours as I now proceed to describe.

The remarkable ornament on the back consists on two very distinctly colored parts: the anterior part may be described as a very elongated triangle with a curved base, the top on the middle of the back; the posterior part is a very broad moonshaped disk having the base of the tail as centre. The triangle is adorned with brownish yellow elongated hairs, they grow longer towards the base where they measure about three inches; these rather stiff hairs are *from base to tip* uniformly colored and between them there is not a single hair of another coloration, and just this mode of coloration is of very high importance, for by supposing that the moonshaped disk had been worn off, being originally colored like the triangle, this moonshaped disk ought to be colored like the triangle namely brownish yellow — and we see the reverse: namely this disk has a grizzled appearance, separated from the curved base of the triangle by a pure black band of hairs. The moonshaped disk strikingly coinciding with an obvious hollow in the spine owes its grizzled aspect from it being covered with two kinds of very short hairs, viz. black ones and yellowish white ones: along the sides of the disk the black hairs overgrow the otherwise colored ones, they are there rather long and so too on the sides of the haunches: such shining elongated black hairs are also to be found along the sides of the above described triangle, growing longer towards its base: Afzelius very clearly described *disk* and *triangle*: »*clunium* extremarum regionisque supra »*anum* sitae cinereo admistus, *tergi* curvi isabellinus, qui »*plagam* ibidem *magnam* format atque *oblongam* sed *prorsum* multo angustiozem.”

From the fact that our young specimen shows no trace of the brownish yellow triangle and that the nearly full-grown specimen has that part not so well developed as the adult one, viz. more of an oblong shape, meanwhile

the brownish yellow hairs have the point of each hair black colored, I conclude that they attain the beautiful dress by turning the dark hairs gradatim paler during advance in life.

The moonshaped grizzled field is colored in the not fullgrown specimen like in the adult one and has the same »worn off” appearance. In the young individual I fail to detect any separation between disc and triangle, nay even those parts are there darker colored than the rest of the body.

To my very great surprise I see in the Book of Antelopes (T. I, p. 126) that the »Crest is orange or rufous, little developed in youth, and again wearing off in old age”. As ground for this statement I must accept that the specimens in the British Museum are in a very bad state of conservation, for the crest is splendidly developed in our fullgrown, especially in our very old specimen (more than 9 years old!): it consists of a thick bundle of long erected hairs, the longest about two inches, between the horns and roundabout the horns, some hairs being black the others red brown: it is in our specimens exactly like in the type-specimen described by Afzelius in 1815, where he said in pithy latin: »*Vertex fasciculo pilorum instructus sesquipollicarium rigidorum, qui partim a fronte retrorsum inclinati nigricantes, partim ab occipite prorsum directi e rufo fusci, inter cornu obviam fiunt eorumque basin anticam obtegunt*”. Evidently the here transcribed description of the crest by Afzelius must have been overlooked by the authors of the »Book of Antelopes”, otherwise they would not have written (T. I. p. 129, note): »afterwards, however, in 1878, struck by the great development of the »*rufous crest of which no mention had been previously made, Dr. Barbosa du Bocage distinguished it as C. ruficrista*”. They have been induced in error by the old specimens in the British Museum, where »*the rufous crests have been worn off and but little trace of them is left*” (cf. above mentioned »note”).

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The direction of the long naked line formed by the row of pores in which the ante-orbital glands open has been much better and much more exactly reproduced on plate XIV of the Book of Antelopes than on plate XIII, which represents our Rotterdam-specimen, as it does not originate from the anterior corner of the eye, but much lower, slantly between eye and muzzle.

The skull of *silvicultrix* has been thrice figured, once by Gray in 1865 under the title of *Cephalophus longiceps* (skull sent from the Gaboon by Du Chaillu), again in 1871 by the same author under the name of *Cephalophus sylvicultrix* (a skull from Sierra Leone) and finally in the very paper and by the same author again under the specific title of *Cephalophus melanoprymnus* (skull from the Gaboon). The worst of all these reproductions is the first one (P. Z. S. L. 1865, p. 205), it has been so wrongly <sup>1)</sup> drawn that it must induce anyone in error if compared with a skull; the second figure (P. Z. S. L. 1871, p. 596) is a very good one, as will be evident if compared with the figures (photo's) of the specimens in the Leyden Museum; the artist however has overlooked and therefore not reproduced the processus coronoideus. The third figure (P. Z. S. L. 1871, p. 594) is that of a young female, belonging to a skin (the other two without skins): this drawing agrees quite exactly with the skull of the young specimen in our collection, it is of the same size apparently, although Gray did not mention its measurements nor the size of the stuffed specimen out of which it had been taken: this conformity of the skull as well as that of the specimen itself as figured (P. Z. S. L. 1871, plate XLIV) by Gray with both our young specimen and its skull abolishes all doubt whether our specimen truly is a young *silvicultrix*.

Again and again I compared the skulls of *silvicultrix* with those of *Jentinkii*, but the differences I could hunt

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1) If it however has been correctly drawn, then it has nothing at all to do with *silvicultrix*.

up are so small that they may be called of no consequence, with the exception however of two points, viz.: 1° the *horns* and 2° the *molars*.

1° *The horns*. They indeed are much shorter in the female than in the male of *silvicultor*; in our female-specimen of *silvicultor* they are exactly of the same size as the horn figured — natural size — by Afzelius, namely 10 cm., meanwhile those of the *Jentinki*-female measure 18 cm.; the horns of the male-*silvicultrix* attain a length of 16.5 cm., that means therefore that they are even less developed in the male of *silvicultor* than in the female of *Jentinki*. Here again is a great difference with »the Book of Antelopes”, where we find: »horns of male and female (of *silvicultor*) almost *precisely alike*, except that the latter are *slightly smaller* 1). Length (♂) 6.4 inches”. The length of the female-horn has not been recorded there; now 6.4 inches is about the length above measured by me, I however cannot entitle a difference of 16.5—10 cm. = 6.5 cm. a *slight* one.

2° *The molars*. Every true upper molar of *silvicultor* shows a rather strongly developed column on its inside and every true lower molar of *silvicultor* bears a ditto but much shorter column on its outside: of such columns there is on the anterior upper and lower true molars only an insignificant trace in *Jentinki* although the molars for the rest agree very strikingly with those of *silvicultor*.

These columns are very commonly to be found among the *Cervidae*, however from all the skulls of *Antilopidae* in our collection I only could find them represented in *Kobus defassa*, *Kobus ellipsiprymnus*, *Oryx leucoryx*, *Oryx gazella*, *Hippotragus niger* and *Strepsiceros strepsiceros*. No other *Cephalophus*-species shows such extra columns, so that *silvicultor* makes a very striking exception!

Differences of less importance are: that in *silvicultor*, like in other *Cephalophus*-species, the face-line is more curved

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1) I italicize.

than in *Jentinki*; the nasalia are more slender anteriorly in *Jentinki* and the processus coronoideus less arched, altogether differences better to see in our photo's than to describe.

One of the skulls — that of the adult male, mentioned above — presents some so very important peculiarities that if it had not been collected like the other ones by Mr. Demery and not labeled by him »Elk'', like he labeled the other specimens, many one would separate it as »the type'' of a new species. Now as I don't like to base a »species'' upon a single skull, I bring it with the other specimens above cited under the head of *silvicultor* until later investigations and more material may prove the one or the other opinion to be correct. I prefer to describe the differences as follows, looking upon it as being a highly remarkable variety of *silvicultor*. The horns and horncores are a good deal shorter than in *silvicultor* and this notwithstanding the skull is larger in all dimensions and belongs to a fullgrown animal; the horns are much more curved backward, they are less broad at the base, and the part of the skull where the horncores arise too is much less developed than in other *silvicultor*-skulls.

I registered the number of vertebrae thoracicae and lumbarae of our *Antilopidae* — about fifty skeletons — and can establish the fact, that all skeletons belonging to specimens of large Antelopes like species of the genera *Damaliscus*, *Connochaetes*, *Kobus*, *Antilope*, *Antidorcas*, *Gazella*, *Hippotragus*, *Oryx*, *Tragelaphus*, *Limnotragus* and *Taurotragus* have 13 thoracic and 6 lumbar vertebrae, meanwhile those of specimens belonging to small Antelopes of the genera *Cephalophus* and *Neotragus* present 14 thoracic and 5 lumbar vertebrae. The skeletons of *Jentinki*<sup>1)</sup> and *silvicultor* make no exception: they show 14 thoracic vertebrae with movable ribs and 5 lumbarae: the

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1) The number 15 for *Terpone longiceps* (Notes Leyden Museum, 1888, p. 19) are incorrect and ought to be 14; as I destroyed my manuscript it cannot be made out whether I made the mistake or the corrector.

Liberia-skeleton has the first lumbar with short movable ribs — apparently an individual abnormality —, the number however of the thoracic + lumbar vertebrae is 19, like as a rule in all *Antilopidae*. On this rule however are very remarkable exceptions, f. i. in our collection there is a skeleton of *Hippotragus equinus* with the formule  $13 + 5 = 18$ , one of *Oryx leucoryx* with  $13 + 5 = 18$ , in the Hunterian Museum, London, is a skeleton of *Connochaetes gnu* with  $14 + 6 = 20$ , and in Gray's Catalogue of Bones has been recorded a skeleton of *Alcephalus bubalis* with  $13 + 5 = 18$ ; Cuvier mentioned a *Tetraceros quadricornis* with  $13 + 5 = 18$  and Pallas a *Saiga saiga* with  $13 + 5 = 18$ .

The possessing of a larger or smaller number of ribs is directly connected with the movableness of the vertebral column, so that an animal with a smaller number of ribs as a rule is quicker in its movements than its fellow having a larger number; this is a remarkably important factor in the economy of the individual. The study of the skeletons still is in its infancy, as the skeletons of not half the number of known species of mammals f. i. have been preserved. However what we know concerning the number of ribs always demonstrates the above rule.

Although there could be summed up a lot of more or less important differences between the skeletons of the two species, f. i. the much broader ribs in *silvicultor*, I think it wiser to describe these skeletons not comparatively as they belong to specimens of a different sex and ditto age, namely to an adult ♀ *Jentinki* and a not fullgrown ♂ *silvicultor*.

The reason why I do not take in consideration the skeleton of the very old Rotterdam-specimen and do not compare it with the old *Jentinki* is the following. We may try to imitate on the best the conditions under which an animal is living in its own fatherland, the experience teaches us that it is generally only a trying, more or less successful indeed according to the more or less likeness or conformity of what we offer with to what the animal is accustomed. And it does not matter whether an animal in confinement



lives long or short a time it notwithstanding has lived in anormal conditions. And nine out of ten times the bony parts teache us that the apparently so healthy looking animal de facto lived in such anormal conditions. So here with the Rotterdam-animal. The skeleton taken as a whole is less developed, as it were suppressed, smaller of shape, bone for bone is shorter than in the skeleton of our younger specimen: especially the horns are in anormal conditions and much shorter than normally, they measure 10.5 cm., the horn-cores about 8 cm., meanwhile the same parts of the younger one measure the horns 16 cm. and the cores about 12 cm.; one of the horns ends in a kind of knob! Very interesting it is that although often are to observe phenomena like the above described in skeletons of animals kept in confinement, these changed conditions of life seem generally never to affect the exterior of the animal, so that the color and especially the distribution of colors seem to be like those under normal circumstances; so it too is in the Rotterdam-specimen, the coloring is to trust, not the skeleton.

From the above considerations and exhibited descriptions we come to the conclusion that to a throughout intelligibility of this Antelope-species we want more material, especially fresh specimens from the Congo and from localities where the animal is living between that locality and Liberia, and above all things very exact descriptions as well as correctly drawn figures are urgent desiderata.

NB. Perhaps later on it may turn out that the Congo-, or southern species specifically differs from the Liberian, and again that the skull with the so remarkably *curved* horns belongs to an animal of a quite different form, f. i. more like the figure 2 on plate XIV of the book of Antelopes. If so then I propose to call the Southern or Congo-animal *Thomasi* and that with curved horns *Sclateri*.